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Some Inadequacies And The Lack Of Standardization In The Education Of Industrial Arts Teachers

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SOME INADEQUACIES AND THE LACK OF STANDARDIZATION IN THE EDUCATION OF INDUSTRIAL ARTS TEACHERS

By
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CHAPTER I

INTRODUCTION

This study proposes to point out some of the inadequacies in the professional preparation of industrial arts teachers, as well as the lack of standardization in the preparation of industrial arts teachers in certain teacher-education colleges. On the basis of present needs in the industrial arts field and the findings presented here, recommendations are made for increasing the efficiency of teacher preparation in the industrial arts field.

REASONS FOR THE STUDY

This study was undertaken because of the writer's personal interest in the problem and a desire to secure more knowledge of what is now being offered in the field of industrial arts in the teachers colleges of the United States.

METHODS EMPLOYED IN THE REPORT

The data collected for this report of teacher education in the field of industrial arts were gathered from personal files, American Industrial Arts Association bulletins, college catalogs, and books from the library of Eastern Illinois State College.

CLARIFICATION OF TERMS

The term "industrial arts," as used here, refers to shopwork and drawing courses offered in elementary, junior, and senior high schools, and at the college level. It is an area of general education recommended for all youth without regard to later earning plans.

"General courses" are those courses which are concerned primarily with the over-all development of the student as a member of our society. They are often called cultural, liberal, or academic courses.

"Professional" is used to include course work which is primarily concerned with the development of the student as a teacher. These courses consist mainly of education courses and methods of teaching subject matter.

"Shop," as used here, includes manual activities in areas of wood, metals, drawing, or other fields commonly associated with the curriculum area known as industrial arts. It is also frequently referred to as simply shop-work, laboratory, technical training, and drafting.[1]

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1. Siro, Einar E. "Preparation and Upgrading of Industrial Education Personnel," Industrial Arts and Vocational Education Magazine, Vol. 40, (June, 1951) p. 223

CHAPTER II

INDUSTRIAL ARTS TEACHER EDUCATION IN THE UNITED STATES

1. RECRUITMENT AND SELECTION OF CANDIDATES

The quality of the teaching done by the industrial arts teachers in the nation's public schools depends to a large degree upon the thoroughness of the preparation of those teachers. This, in turn, is dependent on the type of person seeking such training. Therefore, the problem of teacher recruitment and selection precedes the training of such teachers. When shopwork was first introduced into the public schools, teachers were largely recruited directly from the trades and industry. Even though this method of obtaining industrial arts teachers has been replaced by methods which are educationally more satisfactory, there still remains the problem of recruiting intelligent and capable young people who intend to make teaching a permanent career and not a stepping-stone to industry. Admittedly, one cannot and should not try to force anyone to enter the teaching profession or the field of industrial arts who does not have a strong desire to do so. However, high school teachers can do much toward recruitment of industrial arts teachers by encouraging and advising high school students who possess desirable qualities and abilities for this vocation. Some of these qualities are: above-average intelligence, good health, interest

and participation in civic activities, a love and understanding of children, industry, morality, ingenuity, and a willingness to devote his energies to a profession which in the past has yielded little remuneration.[2]

It has been suggested that every college should have an active plan of recruitment. In some colleges officials work directly with the in-service industrial arts teacher to find high school boys who have the desired qualifications for teaching. Other schools send out two or three college industrial arts majors to various communities to speak to interested high school boys, or the colleges invite high school seniors to spend at least one day on the campus as guests of the school.

Several states now have outstanding recruitment and selection programs for securing the finest possible industrial arts teachers. One hundred teachers and administrators from secondary schools and colleges, in a conference of educators in the midwest in 1946, were asked to list educational problems in the order of their criticalness. Sixty-eight of them put "selection of teacher timber" as first.[3] The New Jersey State Teachers

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2. Frankson, Carl E. "Finding and Selecting Potential Industrial Arts Teachers," School Shop, Vol. 10. Feb. 1951, p. 15.

3. Hippaka, T. A. "The Selection of Teacher Timber," Industrial Arts and Vocational Education Magazine, Vol. 35, (September, 1946) p. 282.

College has an active program of selection. In this college, only the upper half of any graduating class are considered as applicants. An applicant must present written evidence of good moral character, health, and scholarship, and his high school transcript with a recommendation from his principal must be included. When these qualifications have been met, he must appear for a speech test, a health interview, and two general interviews, one of which is with the chairman of the industrial arts department. Having met these further qualifications, the applicant then takes five entrance examinations which cover reading, general science, American history, language, and mathematics. Those applicants who are accepted as freshmen are given another battery of examinations before the end of the first semester. However, enrollment at the college does not conclude the selective program. Those who reveal weaknesses either scholastically or otherwise may be requested to withdraw from the institution at any time during the four years.[4] Needless to say, not all schools have as rigid a selective program as this one in New Jersey. An improved selective program would mean the improvement of services rendered in the profession, which in turn would draw better prospective teachers.

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4. Frankson, Carl E. "Finding and Selecting Potential Industrial Arts Teachers," School Shop, Vol. 10, February, 1951, p. 15.

2. CO-OPERATION OF INDUSTRY IN TEACHER EDUCATION

Industry is co-operating increasingly in keeping public school instructors up to date with industrial methods. Several industries now hold summer clinics of from two to eight weeks in length for industrial arts teachers.

In July, 1943, under the able direction of John W. Aims, the automotive industry originated its first experiment in a general course of shop practice for industrial arts teachers and counselors. The first course was offered to a selected group of seventy teachers in the field who worked forty hours a week for a period of eight weeks, attended lectures on Saturdays, and studied for eight hours, with no pay.[5] The enthusiastic response to the experiment by the teachers has led to the continuance of the clinic to the present time.

Some state departments are now conducting summer clinics for the betterment of teacher education. One example of this is the clinic in the state of Illinois for machine shop teachers, vocational sheet-metal, and building trades instructors.

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5. Beyer, L. R. "A New Educational Field Opened by the Automotive Industry," School and Society, Vol 62, (July, 1945) p. 39.

3. INCONSISTENCIES ON THE GRADUATE LEVEL

Every teacher of English, history, or mathematics has, before entering the four-year college course, a background of elementary and high school study in the subject in which he majors. Seldom does the industrial arts major possess anything approaching this familiarity with the subject which he plans to teach. Therefore, time must be taken from the four-year college period for the student to achieve proficiency in the skills of at least three or four branches of shop work.

Already many teachers have discovered the inadequacy of the usual undergraduate program, and after a few years of experience in the field have become more and more conscious of the deficiencies in their preparation. Seeking to remove these deficiencies and stimulated by a desire for promotion, many industrial arts teachers have been returning to teachers colleges and universities for more advanced study. This is substantiated by the increasing number of employed teachers who have now completed the requirements for the Master of Science degree.

Leaders of teacher education have long been concerned with the problem of graduate study. It seems to be too great a task for the typical four-year curriculum to

adequately prepare teachers in the industrial arts field, especially when the students have had no background training in industrial arts. As has been pointed out, the teacher of industrial arts needs to possess all the personal and professional qualities that are expected of any teacher in addition to the special skills of the shop.

The question of graduate work has become an important factor in the thinking of most industrial arts teachers. In connection with this advanced education there has arisen in the minds of both public school and college teachers the question of what the teacher should do in his efforts to earn a higher degree.

There are those who believe that, regardless of the field of specialization in education, the graduate program should be composed of advanced work in psychology, philosophy, research, and similar more or less academic subjects, while others are of the opinion that the advanced student should prepare himself for an administrative position by electing courses in school administration.

There is a growing feeling among industrial arts people that some provision should be made for teachers doing graduate work in this field to spend at least a part of their time in manipulative work. If the latter view is accepted, it is important that whatever is done

in the shop should be done on a truly graduate level, and not be a repetition of undergraduate work.

But, some may inquire, what is the nature of the shop course that will fit into a desirable graduate program? Obviously, it should be different from the type of course in woodworking which might be required of a freshman on the undergraduate college level. However, a course in woodworking might be acceptable on the graduate level if it included some advanced work in pattern-making, teaching aids, jigs, and fixtures. Perhaps graduate students should be allowed to take courses which they were unable to take previously in an over-crowded undergraduate program.

Whatever the graduate program may consist of, it should broaden the education of the individual, and help him to become a more effective teacher of shop subjects.

4. NEGLECTED PHASES IN TEACHER EDUCATION

Anyone going into industry from the vocational school shop is not expected to achieve high wage-earning efficiency immediately upon entrance to the occupation. It is understood that some essential training can be received on the job. The same may be true of beginning teachers. However, many problems encountered by the beginning teacher can be anticipated and prepared for through the medium of organized courses in college. Problems peculiar to a particular school or community can be solved only through special help and instruction by the immediate superior of the new teacher, but many so-called problems are matters of personal adjustment, initiative, and ingenuity.

Following are listed some of the specific problems to which the teachers colleges could give further attention, and upon which the prospective teacher himself should take some action.

1. Revised methods of supervised teaching, with a view to more successful anticipation of practical problems.

2. A collection of instructional materials in the field of the prospective teacher's choice, and a knowledge of what materials are available.

3. More preparation for selecting, ordering, receiving, maintenance, and issuing of supplies and materials.

4. Better preparation for a good workable safety program.

5. Better instruction in the care, maintenance, and use of teaching aids such as duplicating devices and motion picture equipment.

6. Greater stress upon good shop planning and organization.

7. The responsibility of the shop teacher to the school and to the community.

In addition to the above mentioned neglected phases in the education of prospective teachers, the following inadequacies and lack of standard practices might well be given serious consideration by our college administrators and accrediting agencies.

1. There is a need for the formulation of a definite set of objectives for industrial education departments in all institutions. These will of necessity vary, but may well show more than current consistence and objectivity.

2. A need exists for more standardization of the titles of departments training industrial education personnel, inasmuch as thirty-five different designations are now employed. Industrial arts seems appropriate for those restricting their work to this phase.

3. Both unit and general shops should be provided by most industrial-education teacher training institutions.

4. Persons training for industrial arts teaching should be exposed to wide experiences in manipulative areas, and there should be more consistency among training institutions in this matter.

5. The difference between the number of entering freshmen and of graduating seniors in training institutions indicates the need for better selection of candidates and the elimination of some certain causes of drop-outs.

6. Although it is recognized that the duties of industrial teachers vary in different parts of the country, there is need for more standardization in certificate requirements. The conclusion is forced by the fact of wide employment scatter after graduation, many training institutions contributing heavily outside their own states.

7. Some plan should be developed, at the Master's level, for instructing candidates in the new and changing media of the industrial arts field. Many teachers now in service are required to present types of manipulative work which were entirely missed in their preparation.

8. There would seem to be no justification for employing persons without previous teaching experience in industrial education as staff members in industrial teacher training departments. Public school teaching experience on the secondary school level is especially valuable as background for such positions. Twenty-seven percent of the staff members in the institutions reporting in this study had had no teaching experience prior to college teaching.

9. The college industrial education teacher training staff members should have all possible breadth of background for teaching. Trade experience would be a valuable asset to some, while an absolute necessity for others.[6]

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6. Siro, Eivar E. "Preparation and Upgrading of Industrial Education Personnel," Industrial Arts and Vocational Education Magazine, Vol. 40, October, 1951, p. 308.

CHAPTER III

SOME INADEQUACIES AND INCONSISTENCIES IN INDUSTRIAL ARTS PROGRAMS IN THE UNITED STATES

1. LACK OF STANDARDIZATION IN ENTRANCE, COURSE, DEGREE REQUIREMENTS

An important factor determining the quality of teaching done by industrial arts teachers is the quality of their college preparation. It is possible that, due to the various inconsistencies prevalent in the teachers colleges, many teachers of industrial arts are not adequately prepared to teach. Probably some type of accrediting agency should be established for accrediting industrial arts departments. Standards for vocational teachers already exist in the various state plans, as provided by the Smith-Hughes Act. Standards do not necessarily result in uniformity. One characteristic of a standard, however, is that it represents common agreement, which should be a desirable situation.

In an effort to determine how much standardization has been obtained in our colleges in the field of industrial arts, many catalogs were obtained and analyzed. It was found that there is little agreement between colleges as to the titles of courses, and also concerning the terminology used when reference was made to industrial education. Often the summaries showed courses to be the same in content, but the titles listed were different.

There also seems to be little agreement in course requirements in industrial arts teacher training. In some colleges, major emphasis is placed upon the development of skills in the manipulation of tools; in others, related information is considered to be of more importance.

Woodworking exceeds all other shop offerings in industrial arts teacher education. Drafting, in its various forms, is second to woodworking, and metals are a close third. Programs in crafts and transportation are increasing. Graphic arts is emphasized, but in far less degree than the three leading areas.

Not only is there disagreement in this phase of the work, but also in the requirements for entrance into these schools, as well as in the requirements for the completion of work toward a degree. It appears that one of the first steps toward establishing the teaching of industrial education as a profession would be for industrial arts leaders in each state to agree on the minimum standards for entrance into the field. Most, if not all professional schools do this. After agreement upon the standards is reached, these can be used as a measuring stick for candidates for degrees in industrial arts teaching fields. This measuring stick should be administered by a central body, not by the college in which the candidate receives his training.

In the year 1951, there were two hundred institutions in the United States which offered industrial arts programs. Seventy-one per cent of these institutions used "industrial arts" in their course titles. In these institutions there are many variations with respect to courses offered, faculty training, number of staff members, degrees granted, courses required, space available, and money allotted for equipment.

2. PROFILE OF A "TYPICAL" PROGRAM

"The typical program has been established for 28 years, hence the date of establishment was 1923. It is designated as an Industrial Arts Department, but, while it is more likely to be in a School, or College of Education than in any other single institutional subdivision, it is less likely to be classified under Education than under some alternate grouping.

The department has five faculty members, with a head who ranks as professor, one associate professor, one assistant professor, and two instructors. These men deal with about one hundred industrial arts majors, some full-time, and some part-time students, reasonably equally divided. It is not likely that there is a graduate program, for only one in three institutions has such a program. If one exists, it is handled by the regular staff, and has ten graduate students pursuing work.

This typical program offers a total of 105 semester hours of work and includes 19 hours of woods, 14 hours each of drawing and metals, 11 hours of graphic arts and professional courses, 8 hours of electricity, and 5 hours each of crafts and general shop. Other courses, in which transportation experiences predominate, total 18

semester hours. This program leads to a bachelor of science degree, usually designated as bachelor of science in education. If a master's degree is offered, it is probably a master of arts in education or a master of education degree.

The typical laboratory possesses an area of 14,000 square feet and houses equipment valued at $112,000. If all the areas listed are included, the square footage of space is 23,000, and the equipment valuation is $148,000. Each student enrolled has the use of about 230 square feet of space and, pro rata, an equipment expenditure of $1,500."[7]

For purposes of comparison with a "typical" program, the programs of ten institutions from various geographical locations have been selected. In some instances, these are extreme cases and vary greatly from the "typical" industrial arts program.

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7. Meyer, H. K., and Williams, W.A. Jr. "Inventory Analysis of Industrial Arts Teacher Education Facilities, Personnel and Programs," American Council on Industrial Arts Teacher Education, Yearbook I, 1952 p. 47

PROFILE OF THE DEPARTMENT OF INDUSTRIAL ARTS
SAN JOSE STATE COLLEGE, SAN JOSE, CALIFORNIA

Degrees granted	B.A.E., M.A.E.
Number of staff members	16
Number of Doctor degrees	1
Number of M.A., A.M., M.S. degrees	8
Number of A.B. degrees	7
Average years in teacher education	10.3
Average years in public school teaching	5.1
Undergraduate offering (quarter hrs.)	331
Graduate offering (quarter hrs.)	66
Hours required for I. A. major (units)	90
Floor area (sq. ft.)	18,560
Equipment value	$207,500
Full time majors	243
Part time majors	102
Full time graduate students	40

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8. Ibid., p. 22.

PROFILE OF THE DEPARTMENT OF INDUSTRIAL ARTS

FLORIDA SOUTHERN COLLEGE, LAKELAND, FLORIDA

Degrees granted	B.A., B.S.
Number of staff members	2
Number of M.A. degrees	1
Number of B.S. degrees	1
Average years in teacher education	4.5
Average years in public schools	0
Under-graduate offering (semester hrs.)	85
Floor area (sq. ft.)	3,000
Equipment value	$5,000
Full time majors	30
Part time majors	23

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9. Ibid., p. 29.

PROFILE OF THE DEPARTMENT OF INDUSTRIAL ARTS

EASTERN ILLINOIS STATE COLLEGE, CHARLESTON, ILLINOIS

Degrees granted	B.S.E., M.S.E.
Number of staff members	7
Number of Doctor degrees	5
Number of M.S. degrees	2
Average years in teacher education	10.6
Average years in public school teaching	6.4
Under-graduate offerings (quarter hrs.)	128
Graduate offering	8
Hours required for I.A. major	64
Floor area (sq. ft.)	12,370
Equipment value	$69,217
Full time majors	100

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10. Ibid, p. 36.

PROFILE OF THE DEPARTMENT OF INDUSTRIAL ARTS

BALL STATE TEACHERS COLLEGE, MUNCIE, INDIANA

Degrees granted	B.S.E., M.A.E.
Number of staff members	8
Number of Doctor degrees	4
Number of M.S. degrees	4
Average years in teacher education	6.2
Average years in public school teaching	6.7
Under-graduate offering (quarter hours)	108
Graduate offering	64
Hours required for an I. A. major	64
Floor area (sq. ft.)	29,664
Equipment value	$204,255
Full time majors	227
Full time graduate students	5
Part time graduate students	12

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11. Ibid., p. 43

PROFILE OF THE DEPARTMENT OF INDUSTRIAL ARTS

BETHEL COLLEGE, NORTH NEWTON, KANSAS

Degrees granted	B.S.E.
Number of staff members	2
Number of A.M. degrees	1
Number of B.S. degrees	1
Average years in teacher education	3.5
Average years in public school teaching	5.5
Under-graduate offering (quarter hrs.)	69
Floor area (sq. ft.)	5,280
Equipment value	$5,000
Full time majors	15
Part time majors	2

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12. Ibid, p. 50.

PROFILE OF THE DEPARTMENT OF INDUSTRIAL ARTS

MURRAY STATE COLLEGE, MURRAY, KENTUCKY

Degrees granted	B.S., M.A.E.
Number on staff	3
Number of Doctor degrees	1
Number of M.S. degrees	1
Number of B.S. degrees	1
Average years in teacher education	3.3
Average years in public school teaching	3.3
Undergraduate offering (semester hrs.)	75
Graduate offering	24
Hours required for I. A. major	36
Floor area (sq. ft.)	16,219
Equipment value	$84,000
Full time majors	100
Full time graduate students	20

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13. Ibid., p. 53.

PROFILE OF THE DEPARTMENT OF INDUSTRIAL ARTS

STATE TEACHERS COLLEGE, FITCHBURG, MASSACHUSETTES

Degrees granted	B.S.E., M.Ed.
Number of staff members	8
Number of Doctor degrees	1
Number of M.A. and M.S. degrees	6
Number of B.S. degrees	1
Average years in teacher education	11.6
Average years in public school teaching	5.3
Under-graduate offering (semester hrs.)	73
Graduate offering	20
Floor area (sq. ft.)	14,219
Equipment value	$100,237
Full time majors	134

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14. Ibid., p. 61.

PROFILE OF THE DEPARTMENT OF INDUSTRIAL ARTS

AUSTIN PEAY STATE COLLEGE, CLARKSVILLE, TENNESSEE

Degrees granted	B.S.E.
Number of staff members	1
Number of M.S. degrees	1
Years in teacher education	8
Years in public school teaching	25
Undergraduate offering (quarter hrs.)	87
Floor area (sq. ft.)	16,219
Equipment value	$84,000
Full time majors	14

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15. Ibid., p. 120.

PROFILE OF THE DEPARTMENT OF INDUSTRIAL ARTS

MIDDLE TENNESSEE STATE COLLEGE, MURFREESBORO, TENN.

Degrees granted	B.S., M.A.
Number of staff members	6
Number of M.S. degrees	4
Number of B.S. degrees	2
Average years in teacher education	5.3
Average years in public school teaching	6
Undergraduate offering (quarter hours)	163
Graduate offering	27
Hours required for I.A. major	54
Floor area (sq. ft.)	31,450
Equipment value	$470,000
Full time majors	133
Part time majors	42

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16. Ibid., p. 123

PROFILE OF THE DEPARTMENT OF INDUSTRIAL ARTS
SEATTLE PACIFIC COLLEGE, SEATTLE, WASHINGTON

Degrees granted	B.A.E.
Number of staff members	1
Number of B.S. degrees	1
Average years in teacher education	4
Average years in public school teaching	7
Under-graduate offering (quarter hrs.)	49
Floor area (sq. ft.)	4,250
Equipment value	$16,600
Full time majors	15
Part time majors	10
Full time graduate students	2

17. Ibid., p. 145.

4. EXTREME CASES OF INADEQUACIES

Each of these institutions, plus another one hundred and ninety, are turning out graduates in the field of industrial arts. It would be an impossibility for each graduate from these various colleges to have the same philosophy, the same type of knowledge, and especially the same capacity to obtain that knowledge. However, it does seem that there should be a closer agreement among the teachers colleges as to the type of training the candidate should receive. Industrial arts teacher education colleges should strive to set equalizing requirements for each of the three major areas--general, professional, and shop. This presents a problem for the small college, with its inadequate staff, limited course offerings, and meager or outmoded equipment.

About the same number of hours of work were required from these various colleges to obtain a degree. However, the serious part of the situation is that the student of the small college must take almost every course offered in the industrial arts curriculum in order to have a major in industrial arts. Referring back to the profiles, there are two colleges listed which grant majors in industrial arts, with as few course offerings as forty-

nine, and fifty-four quarter hours. On the other hand, there is one college that offers industrial arts courses amounting to three hundred thirty-one quarter hours.

In addition to the limited course offerings of some colleges, these same schools usually are the ones which also have an inadequate staff. A college in Washington has one staff member, holding a Bachelor of Arts degree, who teaches twenty-five students during the year. This college offers courses amounting to forty-nine quarter hours in industrial arts. This situation would appear to require an unusually well-qualified teacher to teach all the courses listed in the catalog.

In contrast to the above situation, a college in Illinois has seven staff members, five of whom hold a Doctor's degree, while the remaining two have Master's degrees. This faculty teaches approximately one hundred students a year with a course offering of one hundred and twenty-eight quarter hours.

A college in Florida has two staff members who are teaching courses that amount to a total of eighty-five semester hours. One member of this faculty holds a Master's degree; the other, a Bachelor's degree. Neither has had any experience in elementary or secondary school teaching. It is difficult to comprehend that teachers

with very little more preparation than their senior college students, are permitted to teach in our colleges. Another disadvantage to the student is that in many colleges he must train on obsolete and worn-out equipment and in crowded conditions. Many college laboratories compare unfavorably with high school laboratories in this respect. A college in Florida and one in Kansas have equipment valued at five thousand, and five thousand two hundred eighty dollars, respectively. In contrast to these colleges with inadequate equipment, a college in Tennessee has equipment valued at four hundred seventy thousand dollars.

One college has a shop area of three thousand square feet. This college has thirty full time majors. In another college, there are one hundred thirty-three full time majors and thirty-one thousand four hundred fifty square feet of available floor space.

It would appear to be highly desirable to more nearly equalize the educational opportunities of our industrial arts students in teacher education programs.

CHAPTER IV

RECOMMENDATIONS FOR INDUSTRIAL ARTS TEACHER COLLEGES

A thorough discussion of the recommendations for the improvement of teacher-education in industrial arts would be much too lengthy to cover in this report. However, in the following paragraphs are listed some specific recommendations to which the colleges should give further consideration.

It appears that the establishment of an accrediting agency on a national level consisting of authorities in the field of industrial arts could do a great deal in raising the standards of our industrial arts departments. Present college accrediting committees too frequently look at the over-all merits of a college; therefore, inadequate industrial arts programs may be compensated for by other departments.

All of the blame for the inadequacies in the preparation of the teacher does not fall upon the college. The teacher himself should be guided to realize certain deficiencies in his professional qualifications.

There should be an increasing recognition of the importance of collecting instructional material in this particular field, and a definite knowledge of available sources of such materials. A person preparing to teach in this field should recognize this at the beginning of

his professional preparation, and not wait until he has finished his training and is in the field.

Opportunities should be provided in college for industrial arts students to participate in all the activities and duties commonly required of teachers. The practice of having student teachers merely conduct a class in industrial arts is not sufficient to acquaint them with the many and varied duties that a prospective teacher will be expected to assume. Better preparation to meet the problems of selecting, ordering, receiving, maintenance, checking, issuing, and accounting for the great variety of equipment, materials, and supplies are among those duties.

The teacher education colleges should provide more effective educational guidance for its students. This guidance may even start before the candidate becomes a student, through intelligence, aptitude, placement, or other tests in order to determine to candidate's fitness to become a teacher of industrial arts.

The college should provide further instruction concerning a safety program in the school shop. Shop planning and organization should also have an important place in the teacher training curriculum. More instruction should also be given on the care, maintenance, and

use of such teaching aids as duplicating devices and motion picture equipment. The importance of co-operation with others in the school and community program should be stressed. In too many cases, prospective teachers have not been aware of their responsibilities to the rest of the school and especially to the community.

Additional emphasis should be placed on hand tool and machine skills. A few years ago an examination was given to twenty beginning teachers. Each candidate was required to make simple projects in different phases of industrial arts. Twelve of the twenty had difficulty in making a tin cup which was used as a junior high school project. Through inquiry it was learned that sheet metal was given the second year of training and the students had lost their knowledge and skill of sheet metal by the time of their graduation. [18] It would seem advisable to give a short refresher course, and comprehensive tests in all shop subjects in which the student has prepared to teach. The beginning teacher has little time to review subjects after school starts.

Shop classes should be carefully supervised. In some teacher training classes the first hour is devoted

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18. Nihart, C. E., "Industrial Arts Teacher Training," Industrial Arts and Vocational Education Magazine, Vol. 35, November, 1946, p. 384

to lectures and demonstrations followed by a laboratory period in which the student works on his own initiative. The instructor should be "on the job," correcting poor practices, re-demonstrating, and keeping alert to the progress of individual members of the class.

Few college instructors have had recent experience in elementary or secondary schools. Perhaps it would be advisable to have a plan of exchange of industrial arts teachers whereby college teachers could increase their understanding of the many problems confronting public school teachers and students. Also, provisions might be made for college instructors to work in industry during the summers so that they might keep abreast of recent industrial developments.

CHAPTER V

SUMMARY AND CONCLUSIONS

The quality of the industrial arts teachers in our nation's schools depend greatly upon the quality of their preparation. Therefore, it is imperative that we maintain the highest standards possible in our teacher training institutions. The first step toward removing some of the present inadequacies and inconsistencies in the preparation of industrial arts teachers is to have a standardized program of candidate recruitment and selection. Several states at present have outstanding recruitment and selective plans, some of the best being Ohio, Minnesota, Connecticut, New York, and New Jersey. It would be desirable for all teacher education colleges to have an active program of recruitment and selection.

It is also desirable that our teachers keep abreast of recent developments in industry. Several industries are now co-operating in the training of industrial arts teachers by conducting summer clinics for teachers. A teacher who is familiar with new developments in industry would undoubtedly be a better equipped industrial arts teacher.

Many teachers have discovered inadequacies in their teaching preparation, and as a result of this, plus a desire for advancement in position or salary, an increasing number of them have now completed requirements for a

Master's degree. However, there is very little, if any standardization concerning the requirements for a Masters degree. Teachers colleges should come to some agreement regarding the content of the graduate program. Whatever is included should broaden the education of the teacher and make him more effective in his teaching.

Teacher trainees, as well as candidate teachers are neglecting important phases in their professional development. While much can be done by college administrators and accrediting agencies, there is a great deal that can be accomplished by the prospective teacher himself.

As has been brought out by the profiles in Chapter III, there is very little standardization in most phases of teacher education in the field of industrial arts. Of the two hundred teacher education institutions in the United States that offer industrial education only seventy-one per cent agreed upon the term "industrial arts" as their title. There are many inadequacies concerning the qualifications of the teacher education staff members, the floor space available for shop work, and equipment available for instruction. There were approximately the same number of hours required in these various colleges to obtain a degree. However, in the smaller colleges a student is required to take almost every course offered in the industrial arts curriculum in order to

have even a limited major in industrial arts. Obviously, educational opportunities are not equal for all prospective teachers. A plan or program of standardization and equalization should be put into action so that our candidate teachers may be afforded more equal educational opportunities.

It seems that a national accrediting agency could do much toward raising the standards of our industrial arts departments. However, much improvement can be made by the individual colleges through realizing the specific needs of its prospective teachers.

In this study an attempt has been made to point out some of the inadequacies existing in industrial arts departments throughout the nation. Probably none are more aware of the inadequacies and lack of standardization than college administrators and departmental teachers themselves. It is much easier to point out inadequacies and to make recommendations for improvements than it is to put a plan into action. However, teachers colleges have made great progress in the last decade, and it can be expected that they will continue to do so in the future.

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